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User-Driven Product Line Engineering for Assembling Large Families of Software

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Abstract : Traditional software engineering allows engineers to propose to their clients multiple specialized software distributions assembled from a shared set of software assets. The management of these assets however requires a trade-off between client satisfaction and software engineering process. Clients have more and more difficult to find a distribution or components based on their needs from all of distributed repositories. This paper proposes a software engineering for a user-driven software product line in which engineers define a feature model but users drive the actual software distribution on demand. This approach makes the user become final actor as a release manager in software engineering process, increasing user product satisfaction and simplifying user operations to find required components. In addition, it provides a way for engineers to manage and assembly large software families. As a proof of concept, a user-driven software product line is implemented for eclipse, an integrated development environment. An eclipse feature model is defined, which is exposed to users on a cloud-based built platform from which clients can download individualized Eclipse distributions.

Keywords : software product line, model-driven development, reverse engineering and refactoring, agile method
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